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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/629,032	07/31/2000	Luke Surazski	CISCO-2935	4744

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EXAMINER

MILLS, DONALD L

ART UNIT	PAPER NUMBER
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2662

DATE MAILED: 10/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/629,032

Applicant(s)

SURAZSKI ET AL.

Examiner

Donald L Mills

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign not mentioned in the description: "502" (Figure 5). A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

Page 5, line 19, "tot" should be corrected to "to."

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 7-9, 16-18, and 25-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 7, 16, and 25, (For example, see page 17, lines 15-16;) *said first attenuation packet* lacks proper antecedent basis. For the purpose of this examination, the

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examiner will interpret this to mean *said first silence indication packet*. Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 7-9, 16-18, and 25-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Janiszewski et al. (US 5,657,422), hereinafter referred to as Janiszewski.

Regarding claims 7, 16, and 25, Janiszewski discloses a method and apparatus for improving sound quality in digital cellular radio system receiver, which comprises:

Waiting, by the RX unit,/Means for waiting for a first silence indication packet to be received while the RX unit is receiving incoming packets (Claims 7, 16, and 25) (Referring to Figure 2, after six frames of no voice activity, the attenuator calculator 240, receives a declaration of no voice while receiving additional incoming frames. See column 7, lines 58-60 and column 8, lines 10-12.)

Attenuating, by the RX unit,/Means for attenuating the incoming packets when the first silence indication packet is received from a TX unit, the attenuation occurring at a rate responsive to an indication provided by the TX unit (Claims 7, 16, and 25) (Referring to Figure 2, the attenuator calculator 240, when no speech is detected in the signal from the voice activity

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director **230** it is reduced from 1 to 0.65(maxatten), which is dependent upon the previous frame received from the voice activity director **230**. See column 8, lines 45-49 and lines 59-61.)

Mixing, by the RX unit,/Means for mixing comfort noise with the attenuated incoming packets (Claims 7, 16, and 25) (Referring to Figure 2, inserting by the speech attenuator/comfort noise inserter **270** will insert the low pass white noise (comfort noise) with the attenuated signal. See column 9, lines 40-43.)

Waiting, by the RX unit,/Means for waiting for a second silence indication packet to be received (Claims 7, 16, and 25) (Since, the attenuation signal atten[m] is updated every frame, the system inherently waits for the next or second frame, whether or not voice activity was detected, to be received. See column 8, lines 14-16.)

Generating, by the RX unit,/Means for generating comfort noise at a level responsive to an indication provided by the TX unit when the second silence indication is received (Claims 7, 16, and 25) (Referring to Figure 2, generating, by the shaped noise generator **250**, of comfort noise based on the noise estimate N[m] from the noise estimator **220** is generated for each sample in the current frame, which inherently comprises all subsequent frames with voice and without voice traffic as well. See column 9, lines 2-3 and line 10.)

Waiting, by the RX unit,/Means for waiting for voice packets to be received from the TX unit (Claims 7, 16, and 25) (Referring to Figure 2, for each sample the speech attenuator/comfort noise inserter **270** will attenuate the sample by the current frame's attenuation atten [m], which inherently comprises waiting for the next frame containing voice traffic to be received from the noise estimator **220**. See column 9, lines 31-34.)

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Stopping, by the RX unit, Means for stopping the generation of comfort noise and playing voice packets when voice packets are received by the RX unit (Claims 7, 16, and 25) (Referring to Figure 2, no attenuation, by the speech attenuator/comfort noise inserter **270**, or comfort noise will be inserted if $\text{atten}[m]=1$, when speech is detected, and the speech is then played without modification. See column 9, lines 36-38.)

Regarding claims 8, 17, and 26, Janiszewski discloses *wherein the act of attenuation is performed at a rate specified in the first silence indication packet (Claims 8, 17, and 26)* (Referring to Figure 2, the attenuator calculator **240** reduces the signal from 1 to 0.65(maxatten) when the signal does not contain speech, the attenuation rate is inherently specified when the signal does or does not contain speech. See column 8, lines 45-49 and lines 59-61.)

Regarding claims 9, 18, and 27, Janiszewski discloses *wherein the act of generating comfort noise is performed at a level contained in a silence indication packet sent by the TX unit (Claims 9, 18, and 27)* (Referring to Figure 2, the shaped noise generator **250** generates comfort noise based on the noise estimate $N[m]$ from the noise estimator **220** for each sample in the current frame, which inherently depends on the six frames used to declare no speech. See column 9, lines 2-3 and 10; and column 7, lines 58-60.)

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. Claims 1-6, 10-15, and 19-24, are rejected under 35 U.S.C. 103(a) as being unpatentable over Davidson et al. (US 6,577,862 B1), hereinafter referred to as Davidson, in view of Janiszewski et al. (US 5,657,422), hereinafter referred to as Janiszewski.

Regarding claims 1-6, 10-15, and 19-24, Davidson discloses a method for providing comfort noise, which comprises:

Determining, by the TX unit of the IP telephone,/Means for determining whether silence exists (Claims 1, 10, and 19) (Referring to Figure 3, detection, by the GPRS terminal device which is inherently an IP telephone, of silence is inherently performed prior to sending a SID frame. See column 5, line 20, and column 6, lines 65-67.)

If silence is detected, then sending, by the TX unit,/Means for sending a first silence indication packet while said TX unit continues to send voice packets if silence is detected (Claims 1, 10, and 19) (Referring to figure 3, when silence is detected, by the terminal device, a SID frame is inherently sent. See column 6, lines 65-67.)

Waiting, by the TX unit,/Means for waiting a predetermined amount of time to pass (Claims 1, 10, and 19) (The terminal device waits 480 ms of continuous silence. See column 9, lines 16-18.)

Sending, by the TX unit,/Means for sending a second silence indication packet after the predetermined amount of time passes (Claims 1, 10, and 19) (The terminal device generates a SID frame after 480 ms of continuous silence. See column 9, lines 16-18.)

Waiting, by the TX unit,/Means for waiting for voice activity to be detected (Claims 1, 10, and 19) (Referring to Figure 2, the VAD of the terminal device inherently waits for voice activity to be detected. See column 5, lines 66-67 and column 6, line 1.)

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Starting, by the TX unit, Means for starting normal packet activity after the voice activity is detected (Claims 1, 10, and 19) (Referring to Figure 2, the terminal device inherently transmits speech when there is actual speech. See column 5, lines 66-67 and column 6, line 1.)

Davidson further discloses *wherein the first silence indication has an indication therein which contains the background noise level sensed by the TX unit (Claims 2, 11, and 20)* (The discontinuous transmission SID carries a sampling of the silence at the originating terminal. See column 8, lines 1-3.) In addition, Davidson further discloses *wherein the predetermined amount of time comprises an amount of time sufficient for the RX unit to attenuate the real background noise (Claims 5, 14, and 23)/wherein the predetermined amount of time comprises approximately two seconds (Claims 6, 15, and 24)*. (During discontinuous transmission, the receiving terminal unit inherently attenuates the real background noise almost immediately when a SID frame is received.)

Davidson does not disclose *sending a first silence indication packet while the TX unit continues to send voice packets (Claims 1, 10, and 19)*.

Janiszewski teaches a system that combines signal attenuation with comfort noise insertion during periods of non-speech (See column 2, lines 63-65,) in order to overcome the unnatural sound of background noise and distortion of speech (See column 2, lines 29-31.) Janiszewski further teaches *wherein the first silence indication contains an indication therein which indicates the rate at which the real background noise should be attenuated (Claims 3, 12, and 21)* (Referring to Figure 2, when no speech is detected, which inherently acts as the indication for the attenuation rate because the rate is based upon no speech activity, the current frame, which inherently contains background noise since no voice signal is transmitted, is

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attenuated from 1 to 0.65 by a factor of 0.98. See column 8, lines 59-61.) In addition, Janiszewski teaches *where the rate is determined according to the formula Rate = Background Noise (dB)/Time (sec.) (Claims 4, 13, and 22)* (The factor by which the attenuation of the signal is increased is defined as attenrate with a preferred value of 0.98. See column 8, lines 24-26. This factor is applied to a signal where no speech is detected, which inherently comprises background noise since no speech is present, over a period of a single frame, which is inherently a period of time.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the system of Janiszewski in the comfort noise generating method of Davidson. One of ordinary skill in the art at the time the invention was made would have been motivated to do so in order to provide a more natural sound during periods of silence.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald L Mills whose telephone number is 703-305-7869. The examiner can normally be reached on 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 703-305-4744. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

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Donald L Mills

DL Mills

October 16, 2003

Chau T. Nguyen

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